

Application No.: 10/672762

Case No.: 58634US002

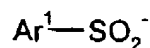
Amendments to the Claims:

The following Listing of Claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1. (Previously presented) A composition comprising:

an electron donor comprising an arylsulfinate salt having a anion of Formula I



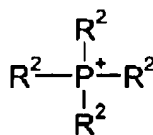
I

and a cation having at least one carbon atom and either a positively charged nitrogen atom or a positively charged phosphorus atom, said electron donor having an oxidation potential in N,N-dimethylformamide of 0.0 to +0.4 volts versus a silver/silver nitrate reference electrode, wherein

Ar^1 is a substituted phenyl, an unsubstituted or substituted C_{7-30} aryl, or an unsubstituted or substituted C_{3-30} heteroaryl, said substituted Ar^1 having a substituent that is an electron withdrawing group or an electron withdrawing group in combination with an electron donating group;

the cation is selected from

- 1) a phosphorous-containing cation of Formula III



III

where each R^2 is independently an unsubstituted alkyl, an alkyl substituted with a hydroxy, an unsubstituted aryl, or an aryl substituted with an alkyl, hydroxy, or combinations thereof; or

- 2) a nitrogen-containing cation having a ring structure comprising a 4 to 12 member heterocyclic group having a positively charged nitrogen atom, said heterocyclic being saturated or unsaturated and having up to 3 heteroatoms selected from oxygen, sulfur, nitrogen, or combinations thereof, wherein said ring structure is unsubstituted or substituted with

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a substituent selected from an alkyl, aryl, acyl, alkoxy, aryloxy, halo, mercapto, amino, hydroxy, azo, cyano, carboxy, alkoxycarbonyl, aryloxy carbonyl, halocarbonyl, or combinations thereof; and

an electron acceptor having a reduction potential in N,N-dimethylformamide of +0.4 to -1.0 volts versus a silver/silver nitrate reference electrode.

2. (Original) The composition of claim 1, wherein the Ar¹ group of the arylsulfinate salt is anthryl, naphthyl, acenaphthyl, phenanthryl, phenanthrenyl, perylenyl, anthracenyl, anthraquinonyl, anthronyl, biphenyl, terphenyl, 9,10-dihydroanthracenyl, or fluorenyl, said Ar¹ group being unsubstituted or substituted with an electron withdrawing group or an electron withdrawing group in combination with an electron donating group.
3. (Original) The composition of claim 1, wherein the Ar¹ group of the arylsulfinate salt is quinolinyl, isoquinolinyl, quinazolinyl, quinoxalinyl, cinnolinyl, benzofuranyl, benzomercaptophenyl, benzoxazolyl, benzothiazolyl, benzimidazolyl, indolyl, phthalazinyl, benzothiadiazolyl, benzotriazinyl, phenazinyl, phenanthridinyl, acridinyl, or indazolyl, said Ar¹ group being unsubstituted or substituted with an electron withdrawing group or an electron withdrawing group in combination with an electron donating group.
4. (Original) The composition of claim 1, wherein the Ar¹ group of the arylsulfinate salt is a substituted phenyl, an unsubstituted or substituted naphthyl, or an unsubstituted or substituted anthraquinonyl, said substituted Ar¹ having a substituent that is an electron withdrawing group or an electron withdrawing group in combination with an electron donating group.
5. (Original) The composition of claim 1, wherein the Ar¹ group is phenyl substituted with an electron withdrawing group selected from halo, cyano, fluoroalkyl, perfluoroalkyl, carboxy, alkoxycarbonyl, aryloxy carbonyl, halocarbonyl, formyl, carbonyl, sulfo, alkoxysulfonyl, aryloxy sulfonyl, perfluoroalkyl sulfonyl, alkyl sulfonyl, azo, alkenyl, alkynyl, dialkylphosphonato, diarylphosphonato, aminocarbonyl, or combinations thereof.

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6. (Original) The composition of claim 1, wherein the anion of the arylsulfinate salt is 4-chlorobenzenesulfinate, 4-cyanobenzenesulfinate, 4-ethoxycarbonylbenzenesulfinate, 4-trifluoromethylbenzenesulfinate, 3-trifluoromethylbenzenesulfinate, 1-anthraquinone sulfinate, 1-naphthalenesulfinate, or 2-naphthalenesulfinate.
7. (Previously presented) The composition of claim 1, wherein the cation of the arylsulfinate salt is the ring structure comprising a 5 member heterocyclic group, a 5 member heterocyclic group fused to an aromatic ring having 0 to 3 heteroatoms, a 6 member heterocyclic group, or a 6 member heterocyclic group fused to an aromatic ring having 0 to 3 heteroatoms, wherein said ring structure is unsubstituted or substituted with a substituent selected from an alkyl, aryl, acyl, alkoxy, aryloxy, halo, mercapto, amino, hydroxy, azo, cyano, carboxy, alkoxycarbonyl, aryloxy carbonyl, halocarbonyl, or combinations thereof.
8. (Previously presented) The composition of claim 1, wherein said heterocyclic group is bicyclic.
9. (Previously presented) The composition of claim 1, wherein said heterocyclic group is fused to a cyclic or bicyclic group that is saturated or unsaturated and that has 0 to 3 heteroatoms.
10. (Previously presented) The composition of claim 1, wherein said heterocyclic group is fused to an aromatic ring having 0 to 3 heteroatoms.
11. Cancel
12. (Previously presented) The composition of claim 1, wherein the cation of the arylsulfinate salt is of Formula III where each R^2 is independently an unsubstituted aryl[.] or an aryl substituted with an alkyl, hydroxy, or combinations thereof.
13. Cancel

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14. Cancel

15. Cancel

16. Cancel

17. (Original) The composition of claim 1, wherein the electron acceptor is an iodonium salt, a hexaarylbiimidazole, a persulfate, a peroxide, or a metal ion in an oxidized state.

18. (Original) The composition of claim 1, further comprising a sensitizing compound capable of absorbing a wavelength of actinic radiation in the range of 250 to 1000 nanometer.

19. (Original) The composition of claim 18, wherein the electron acceptor is a diaryliodonium salt, a hexaarylbiimidazole, or combinations thereof.

20. (Original) The composition of claim 18, wherein the electron acceptor has an electron potential in the range of 0.0 to -1.0 volts versus a silver/silver nitrate reference electrode.

21. (Original) The composition of claim 1, further comprising an ethylenically unsaturated monomer.

22. (Original) The composition of claim 21, wherein the ethylenically unsaturated monomer comprises a monoacrylate, monomethacrylate, diacrylate, dimethacrylate, polyacrylate, polymethacrylate, or combinations thereof, wherein said monomer is unsubstituted or substituted with a hydroxy.

23. (Original) The composition of claim 18, wherein the composition further comprises a hydroxy-containing material selected from an alcohol, a hydroxy-containing monomer, or combinations thereof.

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24-39. Cancel

40. (Withdrawn) The composition of claim 1, wherein the cation comprises tetraphenylphosphonium that is unsubstituted or substituted.

41. (Withdrawn) The composition of claim 1, wherein the cation comprises an imidazolium ion or oxazolium ion that is unsubstituted or substituted.

42. (Withdrawn) The composition of claim 1, wherein the cation comprises benzoxazolium ion or benzothiazolium ion that is unsubstituted or substituted.

43. (Withdrawn) The composition of claim 1, wherein the cation comprises a pyridinium ion or morpholinium ion that is unsubstituted or substituted.

44. (Withdrawn) The composition of claim 1, wherein the cation comprises N-alkylated 1,4-diazabicyclo [2.2.2] octane, N-protonated 1,4-diazabicyclo [2.2.2] octane, N-alkylated 1-azabicyclic [2.2.2] octane, or N-protonated 1,4-diazabicyclo [2.2.2] octane that is unsubstituted or substituted.